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Recreating the Past

Alan Chalmers

Paul Debevec

Philippe
Martinez

Kate Devlin

Philippe



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Recreating the Past

Representation and
Interpretation

Kate Devlin

Duncan Brown

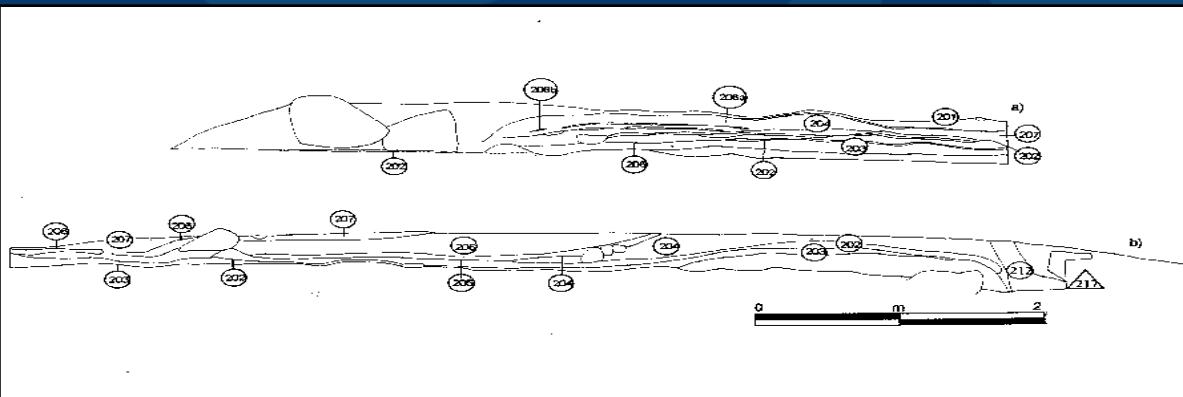
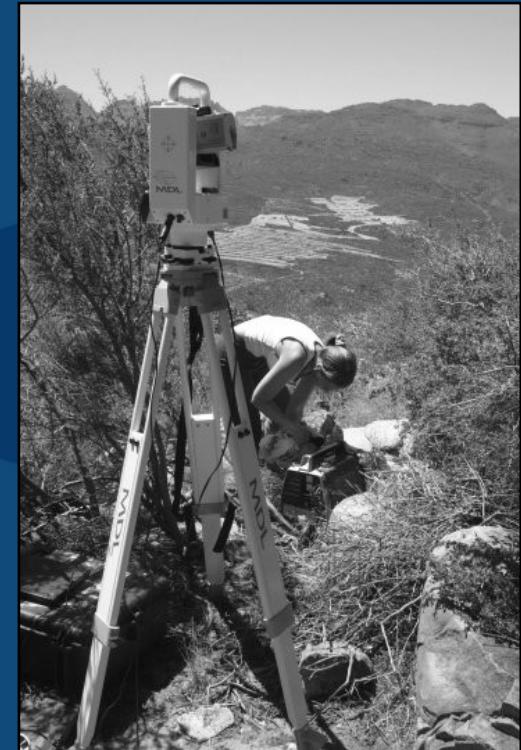
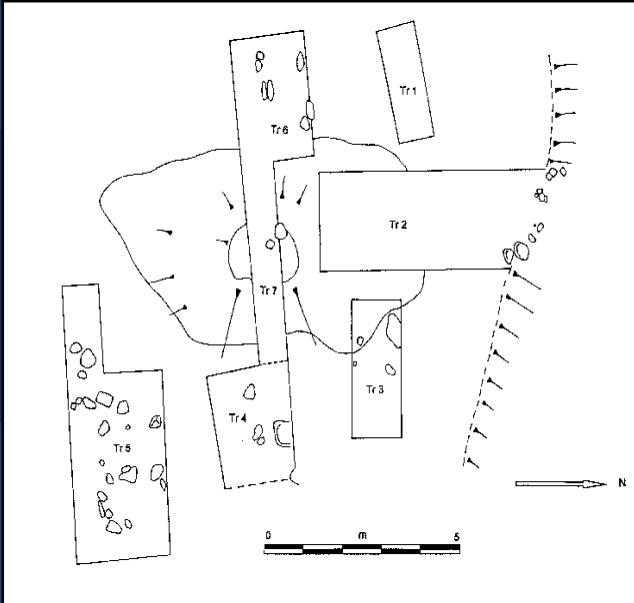
Representation and Interpretation

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- Archaeological illustration
- The idea of realism
- Representing for a purpose
- Misinterpretation
- Setting standards
- Developing new hypotheses

Recording sites

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Archaeological Representation: a history

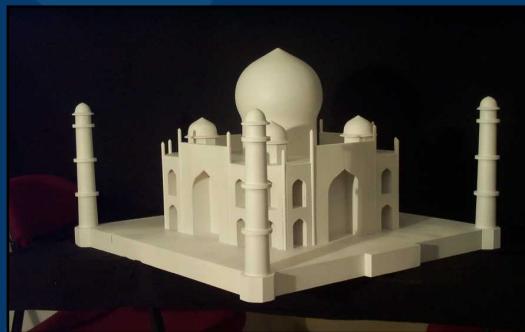
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- Medieval drawings of archaeological sites
- Antiquarian interest during the Renaissance
- Systematic illustration established in C18
- Archaeology becomes a discipline in C19
- Potential of photography (especially aerial) realised after WWI
- CAD developed in 1970s
- 3D computer visualisation begins in 1980s
- GIS in use in archaeology from 1980s onwards
- VRML established in 1990s

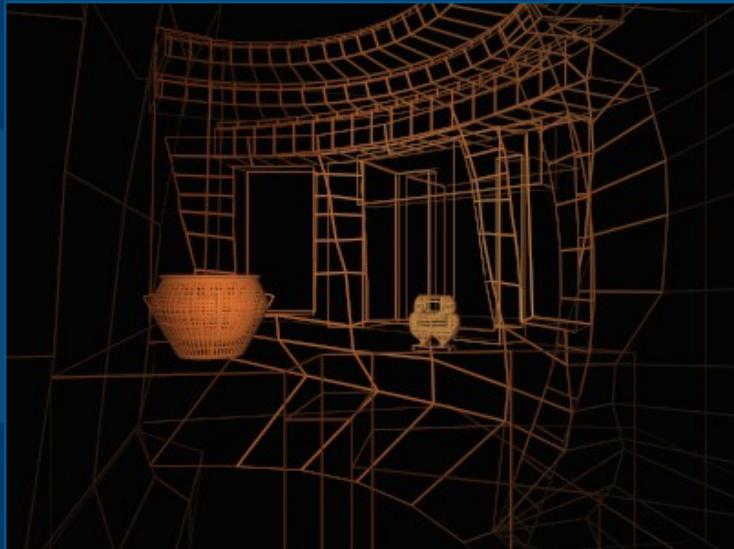
The present...

Multi-sensory and mixed reality applications:

**Physical and perceptual realism,
AV displays, total immersion
(CAVE), shaderlamps**



Visualising the data



From dataset → wireframe → rendering

Case Study: Stonehenge

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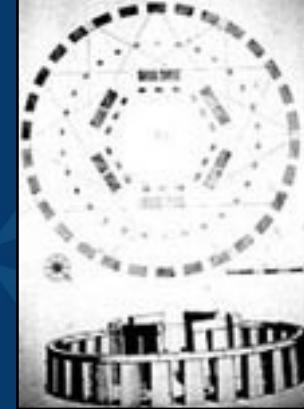
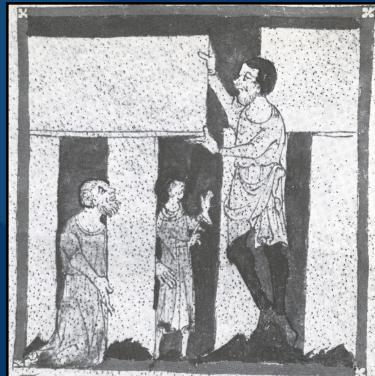
Stonehenge, World Heritage Site, Wiltshire, UK.



Photographer: Ian Britton ©FreeFoto.com

Case Study: Depicting Stonehenge

Fourteenth century through to the present day



Terms and Concepts

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- **Reconstruction** - an objective rebuilding
- **Representation** - a subjective interpretation
- **What do we mean by 'realism'?**
- **Virtual Reality vs. hyperreality**

Defining realism

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- **Everyone has their own version of reality - we bring our own years of experience to all that we view.**
- **Perceptual realism: when a generated scene evokes the same response as the original scene?**

The tangible referent

We try to emulate a ‘tangible referent’.

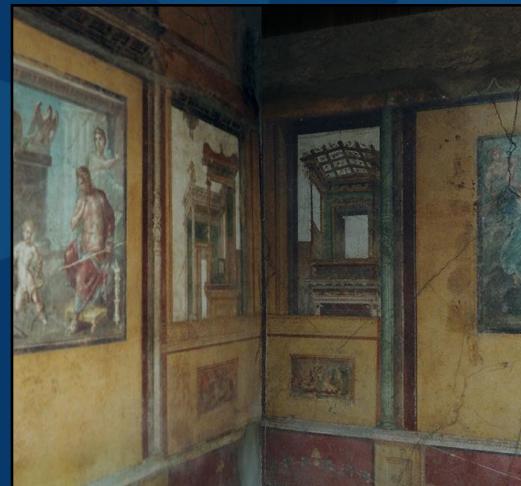
**PROBLEM: we do not have a reality
with which to compare our scenes.**

**How do we choose which aspects of a
multi-faceted site to represent?**

Context

Representations must be placed in context:

- **Temporal**
- **Social**
- **Emotional**



Representing for a purpose

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- **FOR THE ARCHAEOLOGIST** - establishing spatial relationships, investigating new hypotheses
- **FOR THE COMPUTER SCIENTIST** - new graphics techniques
- **FOR ADVERTISING** - PR for companies
- **FOR THE PUBLIC** - educational, entertainment

Misinterpretation

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- A single site can be interpreted in many different ways (e.g. Dewlish Roman villa project).
- We see what we want to see - our synthesised scenes work a bit like Rorschach inkblot tests.
- The decision-making process that led to a particular interpretation needs to be documented.

Setting standards

- **METADATA** - information about information. Need produce a standard format and standard input.
- **PROVIDING ALTERNATIVES** - offering more than a single interpretation. Need ways to present alternative representations.
- **PRESERVING INFORMATION** - keeping data accessible. Beware the advances of technology!

Developing new hypotheses

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Computer graphics offers us a chance to test ideas in a safe and controlled manner.

We are no longer limited to visualising data in two dimensions.

We can recreate past environments and change the variables.

Making it meaningful

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We must consider:

- **The questions that we want answered**
- **Context**
- **Purpose**
- **Target audience**
- **Supporting information**

...in order for our images to be useful.